PHYTOCHEMICAL SCREENING AND ALLELOPATHIC ACTIVITY OF *Etlingera coccinea* (BLUME) S.SAKAI & NAGAM. STEM TOWARDS SEED GERMINATIONS OF MUNG BEAN, *Vigna radiata* (L.) WILCZEK

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Final Year Project Submitted in
Partial Fulfilment of the Requirements for the
Degree of Bachelor of Science (Hons) Biology
in the Faculty of Applied Sciences
Universiti Teknologi MARA

JULY 2017

This Final Year Project Report entitled "**Phytochemical screening and allelopathic activity of *Etlingera coccinea* (Blume) S.Sakai & Nagam. stem towards seed germinations of mung bean, *Vigna radiata* (L.) Wilczek**" was submitted by Estelle Lius, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Science, and was approved by

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ACKNOWLEDGEMENT

First of all, I want to express my gratitude to God for His never ending blessings, loves and merciful until the completion of my project. I would like to deliver my greatest thankfulness for the support, knowledge, guidance and encouragement given by my beloved Supervisor, Puan Farnidah binti Jasnie along the way from the beginning until the end of this project. Not forgetting, special thanks to Dr. Hendry Joseph for his valuable guidance and knowledge that has been given in the making of this projects a success. I would like to say my deepest thankfulness to Encik Ajimi Jawan, my lecturer as well as the project Coordinator for FSG661 for his endless guidance and encouragement through the completion of this project.

My special thanks and appreciation goes to all lecturers of Faculty of Applied Sciences and staffs of Kompleks Makmal Sains dan Agroteknologi (KOMSAT) of UiTM Kampus Kota Kinabalu Sabah especially to the lab assistants, Puan Anah Huda, Encik. Muhammad Sufri Salimun, Puan Atifah Remat, Encik Amzah Jaafar and Encik. Ruzaleh bin Nurdik for their comments, suggestion and provisions that are needed for the improvement and excellence of my project. With all my pleasure, I want to express my thankful to Encik Anselm Bernard from Keningau, who has been my supplier for *Etlingera coccinea* throughout the conduction of this project.

My heartfelt thanks goes to my family members, especially to my parents, Encik Lius bin Lombut and Puan Theresa Joannes, my beloved siblings and my other relatives for providing me their love, care and support in all the way to finish my study. Last but definitely not the least, I would like to express my greatest and deepest thanks to all my friends that stick with me through the thick and thin of time until I finally completed this book. Thank you to my laboratory partner, Sylwianne Sakoin, Debora Jolian, Lizawati Saran Baru and Sitti Norsarina binti Amirullah, my supporting friend Sitty Aira M.T Aidala, Sherene Mylon, Tresyna Jimmy, Sylbialin Amin, Nur Deanna Kamislin, Esther Julian, Machairey Marcus, Jude John, Marommie Rolland Mecillus, Abdul Rashid bin Bakri and many more names to mention.

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ABSTRACT

PHYTOCHEMICAL SCREENING AND ALLELOPATHIC ACTIVITY OF *Etlingera coccinea* (BLUME) S.SAKAI & NAGAM. STEM TOWARDS SEED GERMINATION OF MUNG BEAN, *Vigna radiata*

Allelopathy refers to the chemical inhibition of one species of plant by another. Allelopathic chemicals can be present in any part of plant. The purpose of this study is to determine the allelopathic activity of *Etlingera coccinea* (*E.coccinea*) or locally known as "tuhau" in Sabah. The phytochemical analysis of allelopathic compound from ethyl acetate and petroleum ether of *E.coccinea* stem extract was conducted to screen the presence of alkaloid, tannins, flavonoids, saponin and terpenoids. The result obtained from the phytochemical screening shows that tannins, flavonoids and saponins are present in *E.coccinea* sample extract. Germination, seedling growth and water uptake of *Vigna radiata* were used as the parameters to evaluate the allelopathic activity of *E.coccinea* by using bioassay method. For the allelopathic studies of seed germination, both the ethyl acetate and petroleum ether dried sample extracts shows 100% seed germination. As for the radicle length evaluation, the ethyl acetate and petroleum ether fresh sample extract shows abnormal growth of radicle compared to radicle growth in water which served as control for negative allelopathy with the percentage of inhibition by 63.60% and 41.57% respectively. Lastly, for water uptake measurement, the petroleum ether dried sample extract has the lowest percentage of water uptake by seed. It was concluded that petroleum ether dried *E.coccinea* extract has yield the highest allelopathic effect toward the test organism, *Vigna radiata.* More study on allelopathic potential in plant should be conducted in plant that is commonly used as intercropping to identify whether or not the plant was present with allelopathic activities.